2 SIGNAL BUCKETS COLLECTION MODE

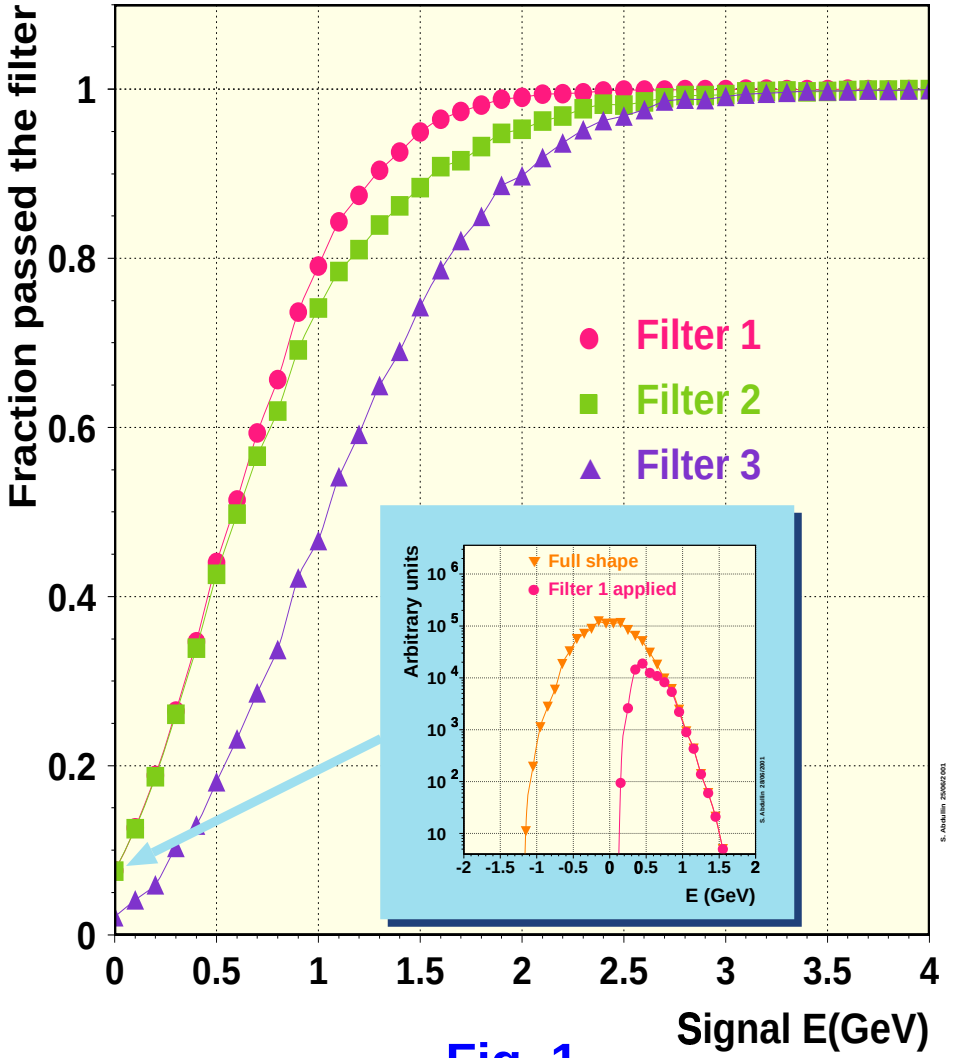

Fig. 1

Calculational details

- noise = 200 MeV, LSB = 300 MeV
- time phase is tuned :| bucket_1 = bucket_2
- baseline is smeared in the 2d ADC channel
- pedestal is estimated as an average value of 64 digitized measurements
- Filter 1 - Both signal bkts $\geq$ 1 ADC count
  abs(max - min) $\leq$ 3 ADC counts
- Filter 2 - Both signal bkts > 1 ADC count
  bucket_1 $\geq$ 0.5 * bucket_2
  bucket_1 $\leq$ 2.0 * bucket_2
- Filter 3 - Both signal bkts $\geq$ 2 ADC counts
  2 preceeding and 1 post-bkts < min (bucket_1, bucket_2)

cf. page 25 in http://cmsdoc.cern.ch/~abdullin/jetmet/meetings/15jun01/talk.pdf

ZERO SUPPRESSION ?

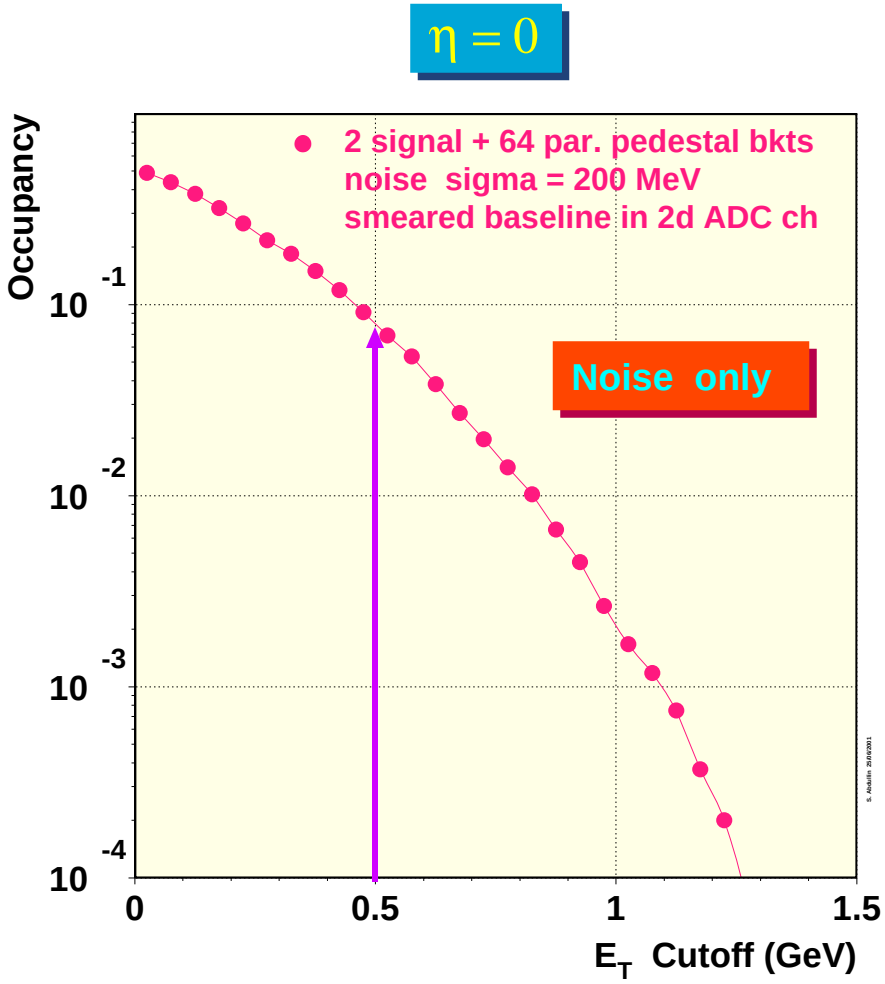

Fig. 2

- Similar (to Filter 1) noise supression can be obtained with zero suppression cut at ~ 500 MeV
- Filter 1 can be tighter, e.g. by increasing minimal bucket content. But it will make worse intermediate-Et signal filtering (Filter 3 in Fig.1)

BCID

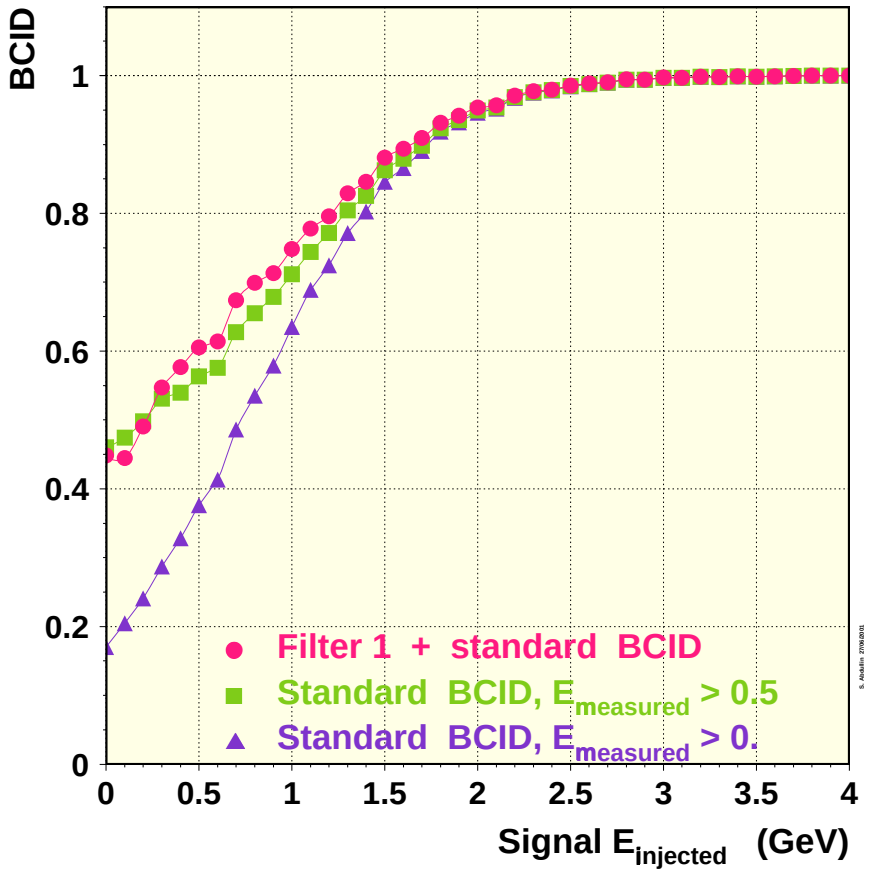

Fig. 3

- **Calculational details**
  - Standard BCID :
    -1, +1 shifted pattern is compared with unshifted, BCID is OK when shift=0 gives maximal (.GT.) signal
  - Filter 1 (see transparency 1):
    Both signal bkts $\geq$ 1 ADC count
    abs(max - min) $\leq$ 3 ADC counts
    shift=0 is compared with -1, +1
    + BCID as in standard case
- **Seems Filter 1 ~ E cut = 0.5 GeV**
- **Noise+LSB hamper shape analysis**